

What is claimed is:

1. A power unit for a vehicle with an internal combustion engine, the power unit comprising:

an internal engine having a cylinder block having a cylinder center axis directed substantially in the vertical direction and a crankshaft;

a static oil hydraulic non-stage transmission for speed-changing the rotation from the crankshaft, the transmission including a swash plate oil hydraulic pump and a swash plate oil hydraulic motor disposed coaxially; and

a speed change drive shaft for reciprocating a drive member for changing a swash plate angle of the swash plate oil hydraulic motor or the swash plate oil hydraulic pump,

wherein the speed change drive shaft is disposed at a position on an upper side of the transmission and in parallel to an axis of the transmission, and a plane connecting an axis of the speed change drive shaft and the axis of the transmission does not intersect with an axis of the crankshaft, and intersects with the axis of the cylinder center axis of the cylinder block at a position on a lower side of the axis of the crankshaft while making an acute angle with the axis of the cylinder center axis of the cylinder block.

2. The power unit for a vehicle with an internal combustion engine as set forth in claim 1, the power unit further comprising:

a speed change ratio sensor that detects a speed change ratio of the transmission disposed on a lateral side of the transmission at a substantially right angle to the axis of the transmission, in relation to the plane connecting the axis of the speed change drive shaft and the axis of the transmission.
3. The power unit for a vehicle with an internal combustion engine as set for in claim 1, wherein a crankcase for bearing the crankshaft of the internal combustion engine incorporates the static oil hydraulic type non-stage transmission and the speed change drive shaft therein, and a breather chamber is disposed on or in the vicinity of an extended axis of the speed change drive shaft in the crankcase.
4. The power unit for a vehicle with an internal combustion engine as set forth in claim 1, wherein the crankshaft is disposed in a substantially front-rear direction of the vehicle body.
5. The power unit for a vehicle with an internal combustion engine as set forth in claim 1, wherein the acute angle with the axis of the cylinder center axis of the cylinder block is about 10°.
6. The power unit for a vehicle with an internal combustion engine as set forth in claim 2, wherein the crankshaft is disposed in a substantially front-rear direction of the vehicle body.

7. A power unit for a vehicle with an internal combustion engine, the power unit comprising:

an internal engine having a cylinder block having a cylinder center axis directed substantially in the vertical direction and a crankshaft;

transmission means for speed-changing a rotation from the crankshaft, the transmission means including a swash plate oil hydraulic pump and a swash plate oil hydraulic motor disposed coaxially; and

reciprocating means for reciprocating a drive member for changing a swash plate angle of the swash plate type oil hydraulic motor or the swash plate type oil hydraulic pump,

wherein the reciprocating means is disposed at a position on an upper side of the transmission means and in parallel to an axis of the transmission means, and a plane connecting an axis of the reciprocating means and the axis of the transmission means does not intersect with an axis of the crankshaft, and intersects with the axis of the cylinder center axis of the cylinder block at a position on a lower side of the axis of the crankshaft while making an acute angle with the axis of the cylinder center axis of the cylinder block.

8. The power unit for a vehicle with an internal combustion engine as set forth in claim 1, the power unit further comprising:

sensor means for detecting a speed change ratio of the transmission means disposed on a lateral side of the transmission means at a substantially right angle to the axis of the transmission means, in relation to the plane connecting the axis of the reciprocating means and the axis of the transmission means.

9. The power unit for a vehicle with an internal combustion engine as set forth in claim 1, wherein a crankcase for bearing the crankshaft incorporates the transmission means and the reciprocating means therein, and a breather chamber is disposed on or in the vicinity of an extended axis of the reciprocating means in the crankcase.

10. The power unit for a vehicle with an internal combustion engine as set forth in claim 1, wherein the crankshaft is disposed in a substantially front-rear direction of the vehicle body.

11. The power unit for a vehicle with an internal combustion engine as set forth in claim 7, wherein the acute angle with the axis of the cylinder center axis of the cylinder block is about 10°.

12. The power unit for a vehicle with an internal combustion engine as set forth in claim 8, wherein the crankshaft is disposed in a substantially front-rear direction of the vehicle body.